What is claimed is:

1. A reorientation controller for a satellite comprising a slew rate command generator generating a slew rate command signal in response to an attitude error signal, corresponding to the difference between an initial attitude and a target attitude, said slew rate command generator introducing a phase lead into said slew rate command signal.

2. A controller as in claim 1 wherein said slew rate command generator performs a spin phase synchronization when said target attitude is unsynchronized in spin phase with said initial satellite attitude.

3. A controller as in claim 1 wherein said initial attitude is an estimated attitude.

4. A reorientation controller for a satellite comprising a slew rate command generator generating a slew rate command signal in response to an attitude error signal, corresponding to the difference between an initial attitude and a target attitude, said slew rate command generator performing a spin phase synchronization when said target attitude is unsynchronized in spin phase with said initial attitude.

5. A controller as in claim 4 wherein said slew rate command generator introduces a phase lead into said slew rate command signal.

6. A satellite reorientation system for a satellite comprising:

a controller generating an attitude error signal in response to an initial attitude and a target attitude and generating a slew rate command signal in response to said attitude error signal, said controller introducing a phase lead into said slew rate command signal; and

at least one control actuator coupled to said controller and adjusting attitude of a spin axis of the satellite in response to said slew rate command signal.

7. A system as in claim 6 wherein said controller introduces said phase lead using trajectory-shaping logic.

8. A system as in claim 6 wherein said controller introduces said phase lead using trajectory-shaping logic in the form of a matrix.

9. A system as in claim 6 wherein said controller introduces said phase lead using a shaping matrix that has a default approximately equal to an identity matrix.

10. A system as in claim 6 wherein said controller introduces said phase lead using a matrix that is re-programmable.

11. A system as in claim 6 wherein said controller performs spin phase synchronization when said target attitude is unsynchronized in spin phase with said initial attitude.

12. A system as in claim 6 wherein said controller in introducing said phase lead introduces said phase lead into generation of said slew rate command signal.

13. A system as in claim 6 wherein said controller introduces said phase lead to compensate for a phase lag caused by finite control bandwidth of the satellite.

14. A system as in claim 6 wherein said controller introduces said phase lead to compensate for a phase lag caused by transport signal time delay.

15. A system as in claim 6 wherein said controller introduces said phase lead to correspond with a phase lag of an actual slew rate of the satellite.

16. A system as in claim 6 wherein said controller introduces said phase lead to correspond with a phase lag of an actual slew rate of the satellite that is associated with a spin axis of the satellite.

17. A system as in claim 6 wherein said controller in generating said slew rate command signal generates an angular position error vector.

18. A system as in claim 17 wherein said controller generates said slew rate command signal along said angular position error vector.

19. A system as in claim 17 wherein said controller generates a control position error signal in response to said angular position error vector.

20. A system as in claim 6 wherein said controller generates a rate error signal through summation of said slew rate command signal and a spin rate command signal and subtraction of a satellite angular rate signal.

21. A system as in claim 6 wherein said controller generates an acceleration command signal in response to a position error signal and a rate error signal, said at least one control actuator adjusting spin axis orientation of the satellite in response to said acceleration command signal.

22. A system as in claim 6 wherein said controller generates an acceleration command signal in response to a position error signal multiplied by a position feedback control gain matrix.

23. A system as in claim 6 wherein said controller generates an acceleration command signal

in response to a rate error signal multiplied by a proportional rate gain matrix.

24. A satellite reorientation system for a satellite comprising:

a controller generating a slew rate command signal in response to an initial attitude and a target attitude, said controller performing spin phase synchronization; and

at least one control actuator coupled to said controller and adjusting position of the satellite in response to said slew rate command signal.

25. A system as in claim 24 wherein said at least one control actuator is selected from at least one of an actuator, a motor, a thruster, and a reaction wheel.

26. A method of reorienting the spin axis of a satellite comprising:

generating a slew rate command signal in response to an initial attitude and a target attitude;

introducing a phase lead into said slew rate command signal; and

adjusting attitude of the satellite in response to said slew rate command signal.

27. A method as in claim 26 further comprising:

determining an angular position error vector in response to said initial attitude and said target attitude; and

generating said slew rate command signal in response to said angular position error vector.

28. A method as in claim 27 further comprising:

applying position and rate controls in response to said angular position error vector; and

adjusting attitude of a spin axis of the satellite in response to said slew rate command signal.

29. A method as in claim 26 further controlling a spin axis trajectory of the satellite during a reorientation maneuver.

30. A method as in claim 29 wherein introducing said phase lead comprises using a trajectory shaping logic that is in the form of a shaping matrix.

31. A method as in claim 26 further comprising performing a minimum-angle spin axis reorientation of a satellite.

32. A method as in claim 31 wherein performing a minimum-angle spin axis reorientation comprises introducing said phase lead with a value approximately equal to a phase lag.

33. A method as in claim 26 wherein introducing said phase lead comprises compensating for a phase lag caused by finite control bandwidth of the satellite.

34. A method as in claim 26 wherein introducing said phase lead comprises compensating for a phase lag caused by transport time delay of the satellite.

35. A method as in claim 26 wherein introducing said phase lead comprises using a trajectory shaping logic that is in the form of a shaping matrix computed based on a satellite spin axis unit vector, spin speed, and transport time delay.

36. A method as in claim 26 further comprising performing a spin phase synchronization when a spin axis of the satellite is approximately equal to a non-geometric body axis.

37. A method of reorienting the spin axis of a satellite comprising:

generating a slew rate command signal in response to an initial attitude and a target attitude;

performing a spin phase synchronization; and

adjusting attitude of the satellite in response to said slew rate command signal.

38. A method as in claim 37 further comprising introducing a phase lead into said slew rate command signal.

39. A method as in claim 37 further comprising performing a minimum-angle spin axis reorientation of a satellite.

40. A method as in claim 37 further comprising compensating for a phase lag caused by finite control bandwidth and transport time delay of the satellite.